

In Fall 2015, EPA tasked Abt (EPA's contractor) with conducting a more detailed review of all permitted dischargers that may be eligible to receive the nutrient general variance.

The attached documents summarize the subset of the 7 facilities that do not appear to meet the assumptions of the general variance. This first email includes the Excel files with the data and calculations used in the reasonable potential analysis. The second email includes the word documents which present the economic analysis, following EPA's 1995 economic guidance and MDEQ's modified approach, completed for each of the seven facilities.

The economic analyses for the 7 towns that house the 7 facilities, MHI percentages were calculated for each town. A secondary score was also calculated for each town using the 6 indicators in the EPA's original interim economics guidance (1995) and using the 5 indicators in Montana's updates to that guidance. The 5<sup>th</sup> secondary indicator in Montana's updated Secondary Score, is entitled "In the document entitled 'Property Tax, fees and revenues<sup>1</sup> divided by MHI and indexed by population'. Abt calculated those number incorrectly for the 7 facilities. The source information to use for this particular secondary indicator comes from the latest available, "Annual Financial reports of the cities and towns of Montana", available from the Local government Services Bureau, Montana Department of Administration. The final number comes from adding from within these reports (usually all found on the "Statement of Activities" page), the charges for General Government Activities (Charges for Services, Fines, Forfeitures, including public works, safety, interest on debt and health), charges for Business Type Activities (Hospital, water, sewer, solid waste, airport, business), and local property taxes. This total is then divided by the town's MHI, and divided by an indexed population number. This number is compared to other numbers from towns using a histogram normal distribution analysis to come up with a weak, medium or strong number for economic health as a Secondary Score. Strong towns pay relatively less current fees and property taxes to other towns (per capita and based on MHI), and weak towns pay relatively more.

Abt used slightly different numbers than DEQ did. Also, note that the financial documents were not available for Sun Prairie Village and Vaughn. That said, the final scores did not change much.

Exhibit 4-4. Secondary Test for Property Tax, fees and revenues Based on Montana DEQ Guidance

Indicator	Weak (Score of 1)	Mid-Range (Score of 2)	Strong (Score of 3)
Property Tax, fees and revenues <sup>1</sup> divided by MHI and indexed by population	More than 3.5	1.5 to 3.0	Less than 1.5

Montana DEQ recalculated those numbers as such and made the corrections below:

Facility	Property Tax, fees and revenues <sup>1</sup> divided by MHI and indexed by population—Abt calculation	Property Tax, fees and revenues <sup>1</sup> divided by MHI and indexed by population-DEQ calculation	Change in score
Chinook	3.7	4.94	Both are Weak (1)
Grass Range	1.7	2.17	Both are mid-range (2)

Hamilton		4.1	4.1	Both are weak (1)
Havre		2.0	1.89	Both are mid-range (2)
Roundup <sup>6</sup>		2.0	2.51	Both are mid-range (2)
Sun Prairie		0.6	N/A	Changes from strong to N/A
Vaughn		0.6	N/A	Changes from strong to N/A

This led to the following changes in the final secondary scores using track changes below. In other words, little changes as the likelihood of substantial impacts does not change for any town.

### Sensitivity Analysis for MPS and Combined MPS and Secondary Score Results

		Facility	Secondary Score			Potential for Substantial Impacts
		Standard	Alternative 2 <sup>2</sup>	EPA Guidance	Montana Method	
Chinook		2.8%	3.5%	2.3	1.6	Likely
Grass Range		3.7%	5.4%	2.5	1.6	Likely
Hamilton		2.2%	2.7%	2.3	1.4	Likely
Havre		1.5%	1.7%	2.1	2.0	Uncertain
Roundup <sup>6</sup>	low	2.0%	2.7%	2.3	1.8	Likely
	high	2.4%	3.6%			Likely
Sun Prairie <sup>3</sup>		1.4%	2.0%	2.7	2.4 2.25	Unlikely (Guidance) Uncertain (Montana)
Vaughn <sup>3</sup>		1.5%	2.1%	2.7	2.2 2.0	Unlikely (Guidance) Uncertain or Likely (Montana)

### What Towns would have to pay

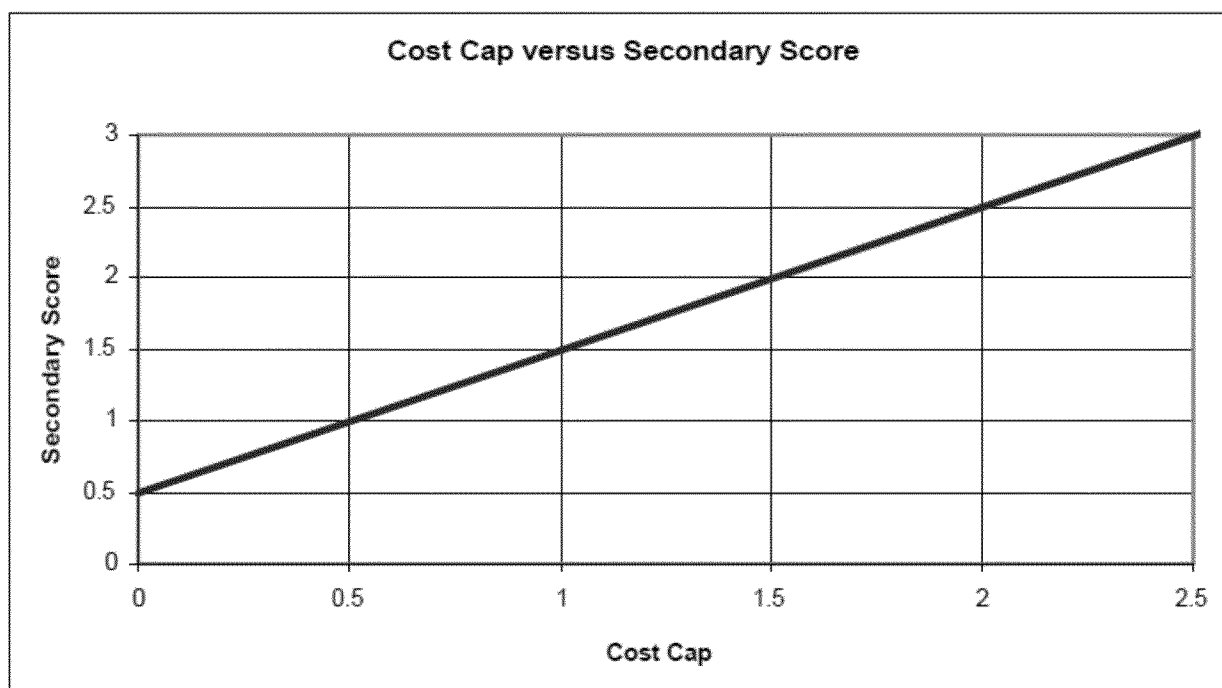
Each of the seven towns would pass the significance test and move on to the Widespread test. Assuming that all towns passed the widespread test, what would these towns have to pay for a variance?

If a permittee has demonstrated that substantial and widespread economic impacts would occur if they were to comply with the base numeric nutrient standards, and there are no reasonable alternatives to discharging, then the cost the permittee will need to expend towards the pollution control project will be based on a sliding scale (**Figure 1**). The cost cap is determined as a percentage of the community's MHI, and the key driver of the cost cap is the secondary test (secondary score) calculated in **step 4** of **Section 1.1**.

For example, a community has demonstrated that substantial and widespread economic impacts would occur from trying to comply with the base numeric nutrient standards, and there were no reasonable

alternative to discharging. If the permittee's average secondary score from the secondary tests was 1.0, then the cost cap for the pollution control project (including current wastewater fees) would be the dollar value equal to 0.5% of the community's MHI at the time that the analysis was undertaken (see blue line, **Figure 1**).

The percentage of a community's MHI—as determined by the 'sliding scale' in **Figure 1**—would translate to the wastewater bills that the community would pay. For example, a community has a MHI of \$40,000/year and the table indicates that 1.0% MHI needs to be expended on the pollution control project. The per-capita wastewater bill for the community would need to be, on average, \$400 per year (\$33.33 per month). If a typical user had a bill that was currently \$300 per year, then an increase of \$100 per year would be warranted. Multiplying \$400/year by the number of users on the system provides the total dollar value to be expended towards construction, operations, and maintenance of the wastewater upgrade. If the wastewater bill was already \$400 or higher, then no increase would be expected (i.e., no further system upgrade would be required).



**Figure 1. Sliding scale for determining cost cap based on a community's secondary score. The x-axis represents percentages of a community's median household income (MHI) that the community would be expected to expend towards the pollution control project as a function of the secondary score (y-axis).**

It should be noted that the final cost of the engineering project may not exactly match the dollar value associated with the percent MHI determined via **Figure 1** (i.e., the actual project cost could be somewhat lower or somewhat higher than the dollar value equivalent for the percent MHI of the community in question). Engineers should view the dollar value equivalent of the MHI derived from **Figure 1** as a target, to help select the most appropriate water pollution control solution for the community. In order to accommodate actual engineering costs for the project, the Department will provide flexibility around the dollar value arrived at via **Figure 1**, subject to final Department approval.

Back to our seven towns

Facility	Existing Annual Household Costs <sup>2</sup>	Number of Households	Total existing annual Costs Per Household <sup>3</sup>	MHI (2014\$)	Secondary score (Montana method)	Sliding Scale Score of MHI required	Existing MPS <sup>5</sup>	Difference
Chinook	\$446,863	694	\$644	\$38,267	1.6	1.1	1.7%	Meet it
Grass Range	\$11,376	79	\$144	\$24,861	1.6	1.1	0.6%	0.5%
Hamilton	\$373,705	1,489	\$251	\$26,023	1.4	0.9	1.0%	Meet it
Havre	\$1,294,000	3,056	\$423	\$43,483	2.0	1.5	1.0%	0.5%
Round up	\$200,304	690	\$290	\$31,616	1.8	1.3	0.9%	0.4%
Sun Prairie	\$201,750	625	\$323	\$52,282	2.25	1.75	0.6%	1.15%
Vaughn	\$110,208	287	\$384	\$46,154	2.0	1.5	0.8%	0.7%